



[illegible]

[illegible]



100 Arg Gly Asp Lys Val Lys Asn Ala Val Leu Ala Arg Ala Lys Arg  
 110 Val Leu Lys Lys Ser Arg Trp Ala Arg Tyr Thr Ala Trp Lys Val Lys  
 120 Ser Lys Trp Asp Lys Lys Asn Leu Trp Lys Gly Gly Val Leu Arg Lys  
 130 Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Trp Leu Thr Trp Lys Tyr  
 140 Trp Ala Asn Val Tyr Ala Tyr Arg Arg Gly Leu Ala Leu Ala Val Gly  
 150 Leu Trp Ser Ile Pro Val His Pro Ile Gly Tyr Tyr Asp Ala Leu Lys  
 160 Leu Leu Gly Lys Met Gly Gly Ser Ala Pro Pro Asp Leu Ser Trp Arg  
 170 Gly Trp Leu Lys Val Pro Tyr Asn Val Gly Trp Gly Thr Thr Gly Asn  
 180 Phe Ser Thr Gly Lys Val Lys Met His Ile His Ser Thr Asn Gly Val  
 190 Thr Asn Ile Tyr Asn Val Ile Gly Thr Leu Arg Gly Ala Val Gly Pro  
 200 Asp Arg Tyr Val Ile Leu Gly Gly His Arg Asp Ser Trp Val Phe Gly  
 210 Gly Ile Asp Pro Gly Ser Gly Ala Ala Val Val His Gly Ile Val Arg  
 220 Ser Phe Gly Thr Leu Lys Lys Gly Gly Trp Arg Pro Arg Arg Thr Ile  
 230 Leu Phe Ala Ser Trp Asp Ala Gly Gly Phe Gly Leu Leu Gly Ser Thr  
 240 Gly Trp Ala Gly Gly Asn Ser Arg Leu Leu Gly Gly Arg Gly Val Ala  
 250 Tyr Ile Asn Ala Asp Ser Ser Ile Val Gly Asn Tyr Thr Leu Arg Val  
 260 Asp Lys Thr Pro Leu Met Tyr Ser Leu Val His Asn Leu Thr Lys Gly  
 270 Leu Lys Ser Pro Asp Gly Gly Phe Gly Gly Lys Ser Leu Tyr Gly Ser  
 280 Trp Thr Lys Lys Ser Pro Ser Pro Gly Phe Ser Gly Met Pro Arg Ile  
 290 Ser Lys Leu Gly Ser Gly Asn Asp Thr Gly Val Phe Phe Thr Arg Leu  
 300 Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr Lys Asn Trp Thr Thr Asn  
 310 Lys Phe Ser Gly Tyr Pro Leu Tyr His Ser Val Tyr Gly Thr Tyr Gly  
 320 Leu Val Gly Lys Phe Tyr Asp Pro Met Phe Lys Tyr His Leu Thr Val  
 330 Ala Gly Val Arg Gly Gly Met Val Phe Gly Leu Ala Asn Ser Ile Val  
 340 Leu Thr Phe Asp Lys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala  
 350 Asp Lys Ile Tyr Ser Ile Leu Met Lys His Pro Gly Thr Thr Lys Thr  
 360 Tyr Ser Val Ser Phe Asp Ser Leu Ile Ser Ala Val Lys Asn Thr Thr  
 370 Val Leu Ala Ser Lys Thr Ser His Arg Leu Thr Asp Thr Asp Lys Ser  
 380 Asn Trp Thr Val Leu Arg Met Met Asn Asp Val Leu Thr Thr Thr Thr

Arg Ala Leu Leu Asp Thr Leu Arg Leu Arg Arg Leu Leu Lys Arg  
 His Val Leu Lys Ala Leu Ser Ser His Asn Lys Lys Ala Lys Val Val  
 Leu Leu Arg Leu Lys Asp Ala Leu Leu Arg His Leu Ser Lys Val Arg  
 Pro Ser Lys Ala Trp Gly His Val Lys Arg His His Tyr Val Ala Ala  
 Phe Thr Val His Ala Ala Ala His Thr Leu Ser His Val Ala

<210> 3  
 <211> 376  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)...(3768)

4400 3  
 Arg GAG TGG GGG GGC TTG TGC TGC TGG TGG CTC CTC CTC GGC CTC TTA 48  
 Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu  
 -20 -10  
 GCG CAG GGA GGC GGG AGC ACC CAA ATG TGC ACC GGC ACA GAC ATG TAT 96  
 Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys  
 -5 -1 1 5  
 TGG TGG CTC CTC ACC ACC ACC CAG CAG CAG CTC CAG ATG CTC CTC CTC 144  
 Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His  
 10 15 20  
 CTC TAC CAG GGC TGC CAG GTG GTG CAG GGA AAC CTC GAA CTC ACC TAT 192  
 Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr  
 30 35 40  
 CTG CCG ACC AAT GGC AGC CTG TCC TTT CTG CAG GAT ATC CAG CAG TAT 240  
 Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Gln Val  
 45 50 55  
 CAG GGC TAC TGG CTC ATC GGT CAC ATC CAA CTG AGG CAG GTC CCA CTC 288  
 Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu  
 60 65 70  
 CAG AGG CTG GGG AAT GTG CGA GGC GAG CAG CTC TTT GAG GAC AAC TAT 336  
 Gln Arg Leu Arg Ile Val Arg Gly Thr His Leu Phe Glu Asp Asn Tyr  
 75 80 85  
 TTT CTG ACC CTG TTA GAC AAT GGA TAT CAG CAG GAG AAC AGC AAT CTC 384  
 Ala Leu Ala Val Leu Asp Asn Gly Asp His Leu Asn Asn Thr Thr His  
 90 95 100  
 CTC CCA GGT ACC TAC CCA GGA GGC TAT CAG CAG CTG CAG CAT TTA CTC 432  
 Val Thr Gly Ala Ser Pro Gly Gly Leu Arg His Leu Gln Leu Arg Ser  
 105 110 115  
 CTC TTA AAT ATC TTA TTA GGA GGT TAT CAG CAG CAG CAG CAG CAG CAG 480  
 Leu Thr His Ile Leu Lys Gly Gly Val Leu Leu His Arg Asn His His  
 120 125 130  
 TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT 528  
 Leu Tyr Lys His Asp Thr Ile Leu Lys Lys Arg Leu His His Lys Asn  
 135 140 145  
 TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT TAT 576  
 Leu Tyr Lys His Asp Thr Ile Leu Lys Lys Arg Leu His His Lys Asn

Asn	Glu	Leu	Ala	Leu	Thr	Leu	Ile	Asp	Leu	Ala	Asn	Ser	Asn	Ala	Cys	
187						187					187					
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	64
His	Pro	Cys	Pro	Pro	Asn	Cys	Cys	Gly	Pro	Ala	Cys	Pro	Gly	Ala	Gly	
190						190					190					
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	65
Pro	Glu	Asp	Cys	Gln	Ser	Leu	Thr	Asn	Thr	Thr	Cys	Ala	Gly	Gly	Cys	
194						194					194					
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	1
Ala	Arg	Cys	Lys	Gly	Pro	Leu	Pro	Thr	Asp	Cys	Cys	His	Glu	Gln	Cys	
205						205					205					
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	66
Ala	Ala	Gly	Cys	Thr	Gly	Pro	Lys	His	Ser	Asp	Cys	Leu	Ala	Cys	Leu	
220						220					220					
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	67
His	Phe	Asn	His	Ser	Gly	Ile	Cys	Gln	Leu	His	Cys	Pro	Ala	Leu	Val	
235						235					235					
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	68
Thr	Tyr	Asn	Thr	Asp	Thr	Phe	Glu	Ser	Met	Pro	Asn	Pro	Glu	Gly	Arg	
250						250					250					
tat	aca	ttc	ggc	goc	agg	tgt	gtg	act	gac	tgt	ccc	tao	aac	tao	att	69
Tyr	Thr	Phe	Gly	Ala	Ser	Cys	Val	Thr	Ala	Cys	Pro	Tyr	Asn	Tyr	Leu	
270						270					270					
tct	acg	gac	gtg	gga	tec	tgc	acc	ttc	gta	tgc	ccc	ctg	cac	aac	caa	70
Ser	Thr	Asp	Val	Gly	Ser	Cys	Thr	Leu	Val	Cys	Pro	Leu	His	Asn	Gln	
285						285					285					
gag	gtg	aca	gca	gag	gat	gga	aca	gag	ggg	tgt	gag	aag	tgc	agg	aag	1009
Glu	Val	Thr	Ala	Glu	Asp	Gly	Thr	Gln	Arg	Cys	Glu	Lys	Cys	Ser	Lys	
300						300					300					
ccc	tgt	gac	caa	gtc	tgc	tat	ggg	ttc	gac	ttg	gag	ccc	ttg	gga	gag	1010
Pro	Cys	Ala	Arg	Val	Cys	Tyr	Gly	Leu	Gly	Met	Glu	His	Leu	Arg	Glu	
315						315					315					
gtg	agg	gca	gtt	acc	agt	gac	aat	atc	gag	gag	ttt	got	ggg	tgc	aag	1104
Val	Arg	Glu	Val	Thr	Ser	Ala	Asn	Ile	Gln	Glu	Phe	Ala	Gly	Cys	Lys	
330						330					330					
aag	atc	ttt	ggg	agg	ctg	gca	ttt	ctg	ccg	gag	agg	ttt	gat	ggg	gac	1152
Lys	Ile	Phe	Gly	Ser	Leu	Ala	Phe	Leu	Pro	Gln	Ser	Phe	Asp	Gly	Asp	
350						350					350					
caa	gac	ttc	aac	act	gac	ccg	ctc	gag	caa	aac	gag	ctc	caa	gtg	ttt	1200
Pro	Ala	Ser	Asn	Thr	Ala	Pro	Leu	Gln	Pro	Gln	Gln	Leu	Gln	Val	Phe	
365						365					365					
gag	act	ctg	gaa	gag	atc	aca	ggg	ttc	cta	aac	atc	cca	gca	ggg	ccc	1248
Glu	Thr	Leu	Glu	Glu	Ile	Thr	Gly	Tyr	Ile	Tyr	Ile	Ser	Ala	Trp	Pro	
380						380					380					
gac	agg	ctg	act	gac	ctc	agg	ctc	ttc	gag	aac	ctg	caa	gta	atc	gag	1296
Asp	Ser	Leu	Pro	Asp	Leu	Ser	Val	Phe	Gln	Asn	Leu	Gln	Val	Ile	Arg	
395						395					395					
gaa	gga	att	ctc	aac	aat	gac	gac	ttc	ttc	ctc	acc	ctg	caa	ggg	ctc	1344
Gly	Asn	Ile	Leu	His	Asn	Gly	Ala	Tyr	Ser	Leu	Thr	Leu	Gln	Gly	Leu	
410						410					410					
gac	atc	gac	ctc	ctc	ggg	ctg	ccc	ttc	ctc	gga	ctc	gac	gac	act	ttc	1392
Gly	Ile	Ser	Trp	Leu	Gly	Leu	Asn	Ser	Leu	Asn	Gln	Leu	Gly	Ser	Gly	
430						430					430					
gac	atc	gac	ctc	ctc	ggg	ctg	ccc	ttc	ctc	gga	ctc	gac	gac	act	ttc	1440
Leu	Ala	Ile	Ile	His	His	Asn	Thr	His	Leu	Cys	Phe	Val	His	Thr	Val	
445						445					445					
gac	atc	gac	ctc	ctc	ggg	ctg	ccc	ttc	ctc	gga	ctc	gac	gac	act	ttc	1488

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------



100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2147																				
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2148																				
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2149																				
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2150																				
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2151																				
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2152																				
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2153																				
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2154																				
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2155																				
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2156																				
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2157																				
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2158																				
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2159																				
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2160																				
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2161																				
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2162																				
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2163																				
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2164																				
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2165																				
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2166																				
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2167																				
521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2168																				
541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2169																				
561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2170																				
581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601
gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag
2171																				
601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616					



Val Thr Gly Ala Ser Leu Gly Gly Leu Val Gln Gln Ser Asn Val  
 100 101 102 103 104 105 106 107 108 109 110 111 112 113  
 Leu Thr Gly Leu Leu Lys Gly Gly Val Val Val Asn Asn Ser Val  
 114 115 116 117 118 119 120 121 122 123 124 125 126  
 Leu Tyr Lys Val Asp Val Leu Leu Thr Gly Asp Val Phe His Lys Asn  
 127 128 129 130 131 132 133 134 135 136 137 138 139  
 Asn Glu Leu Ala Leu Thr Leu Leu Asp Val Asn Arg Ser Asn Ala Lys  
 140 141 142 143 144 145 146 147 148 149 150 151 152  
 His Leu Tyr Ser Fr Met Lys Lys Gly Val Asn Tyr Trp Gly His Val  
 153 154 155 156 157 158 159 160 161 162 163 164 165  
 Ser His Asp Tyr His Ser Leu Thr Asn Val Val Tyr Ala Gly Gly Lys  
 166 167 168 169 170 171 172 173 174 175 176 177 178  
 Ala Asn Tyr Lys Gly Pro Leu Pro Thr Asp Lys Tyr His Glu Gln Tyr  
 179 180 181 182 183 184 185 186 187 188 189 190 191  
 Ala Ala Gly Tyr Thr Gly Pro Lys His Ser Asp Tyr Leu Ala Tyr Leu  
 192 193 194 195 196 197 198 199 200 201 202 203 204  
 His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu Val  
 205 206 207 208 209 210 211 212 213 214 215 216 217  
 Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg  
 218 219 220 221 222 223 224 225 226 227 228 229 230  
 Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Lys Pro Tyr Asn Tyr Leu  
 231 232 233 234 235 236 237 238 239 240 241 242 243  
 Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln  
 244 245 246 247 248 249 250 251 252 253 254 255 256  
 Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys  
 257 258 259 260 261 262 263 264 265 266 267 268 269  
 Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu  
 270 271 272 273 274 275 276 277 278 279 280 281 282  
 Val Arg Ala Val Thr Ser Ala Asn Ile Gln His Phe Ala Gly Cys Lys  
 283 284 285 286 287 288 289 290 291 292 293 294 295  
 Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro His Ser Phe Asp Gly Asp  
 296 297 298 299 300 301 302 303 304 305 306 307 308  
 Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro His Gln Leu Gln Val Phe  
 309 310 311 312 313 314 315 316 317 318 319 320 321  
 Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro  
 322 323 324 325 326 327 328 329 330 331 332 333 334  
 Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg  
 335 336 337 338 339 340 341 342 343 344 345 346 347  
 Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu  
 348 349 350 351 352 353 354 355 356 357 358 359 360  
 Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser Gly  
 361 362 363 364 365 366 367 368 369 370 371 372 373  
 Leu Ala Leu Ile His His Asn Thr His Leu Tyr Phe Val His Thr Val  
 374 375 376 377 378 379 380 381 382 383 384 385 386  
 Pro Trp Asp Gln Leu Phe Arg Asn Fr His His Ala Leu Leu His Thr  
 387 388 389 390 391 392 393 394 395 396 397 398 399  
 Ala Asn Arg Pro Glu Asp Glu Cys Val Gly His Gly Leu Ala Cys His  
 400 401 402 403 404 405 406 407 408 409 410 411 412  
 His Leu Cys Ala Arg Gly His Cys Trp Gly His Gly Pro Thr Gln Tyr  
 413 414 415 416 417 418 419 420 421 422 423 424 425  
 Val Asn Cys Ser Gln His Leu Arg His His His Cys Val Gln Gln Cys  
 426 427 428 429 430 431 432 433 434 435 436 437 438  
 Arg Val Leu His Gly Leu Pro Arg His Thr Val Asn Ala Arg His Tyr  
 439 440 441 442 443 444 445 446 447 448 449 450 451  
 Leu Thr Tyr His Fr Val Cys Gln Fr His Asn Gly Ser Val Thr Tyr  
 452 453 454 455 456 457 458 459 460 461 462 463 464  
 His Gly Fr His Ala Asp His Tyr Val Ala Tyr Ala His Tyr Lys Arg

611 His His Tyr Val Ala Arg Tyr His Val Arg Val Lys His Asp Leu  
 612 Arg Tyr Met His Ile Trp Lys His His Arg Val Val Lys Ala Tyr Ala  
 613 Lys Tyr Arg Ile Asn Tyr Thr His Ser Tyr Val Arg Leu Asp Asp Lys  
 614 Gly Tyr Arg Ala Glu His Arg Ala Ser His Leu His Ser Ile Val Met  
 615 Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val Thr Gly  
 616 Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr Met Arg  
 617 Arg Leu Leu Gln Glu Thr Glu Leu Val His His Leu Thr Pro Ser Gly  
 618 Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu Leu  
 619 Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys  
 620 Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala Ile  
 621 Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu  
 622 Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser Arg  
 623 Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln Leu  
 624 Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg Gly Arg  
 625 Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala Lys Gly  
 626 Met Ser Tyr Leu Gln Asp Val Arg Leu Val His Arg Asp Leu Ala Ala  
 627 Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe  
 628 Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala Asp  
 629 Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Gln Ser Ile Leu Arg  
 630 Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val  
 631 Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro Ala  
 632 Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Gln Arg Leu Pro Gln Pro  
 633 Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met  
 634 Ile Asp Ser Gln Cys Arg Pro Arg Phe Arg Gln Leu Val Ser Glu Phe  
 635 Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn Gln  
 636 Asp Leu Gly Fr Ala Ser Pro Leu Asp Ser Thr Phe Tyr Arg Ser Leu  
 637 Leu His Asp Asp Asp Met Gly Asp Leu Val Arg Ala His His Tyr Leu  
 638 Val Fr His His Gly Phe Phe Cys Fr Arg His Ala Pro Gly Ala Gly  
 639

•

100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Val	Arg	Val	Arg	Gly	Ala	Val	Leu	Gly	Leu	Tyr	Leu	Gly	Met	Asp	Lys					
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141
Lys	Gly	Lys	Leu	Val	Ala	Lys	Leu	Asn	Gly	Lys	Gly	Lys	Asp	Gly	Val					
142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162
Leu	Thr	Val	Val	Val	Leu	Val	Asn	Asn	Tyr	Thr	Ala	Leu	Val	Asn	Ala					
163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183
Lys	Tyr	Ala	Gly	Tyr	Tyr	Met	Ala	Phe	Thr	Arg	Lys	Gly	Arg	Leu	Arg					
184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204
Lys	Gly	Leu	Arg	Leu	Gly	His	His	Thr	Glu	Gln	Ser	Leu	Arg	Phe	Glu					
205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225
Arg	Leu	Pro	Arg	Gly	His	His	Thr	Glu	Gln	Ser	Leu	Arg	Phe	Glu						
226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246
Phe	Leu	Asn	Tyr	Pro	Pro	Phe	Thr	Arg	Ser	Leu	Arg	Gly	Ser	Gln	Arg					
247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267
Asn	Thr	Ala	Pro	Ala	Pro	Arg														

411-6  
 411-11  
 411-187  
 411-800 sapiens

Met	Gly	Ser	Pro	Arg	Ser	Ala	Leu	Ser	Cys	Leu	Leu	Leu	His	Leu	Leu
1									10					13	
Val	Leu	Cys	Leu	Gln	Ala	Gln	Val	Thr	Val	Gln	Ser	Ser	Pro	Asn	Phe
Thr	Gln	His	Val	Arg	Gln	Gln	Ser	Leu	Val	Thr	Asp	Gln	Leu	Ser	Arg
Arg	Leu	His	Arg	Thr	Tyr	Gln	Leu	Tyr	Ser	Arg	Thr	Ser	Gly	Lys	His
Val	Gln	Val	Leu	Ala	Asn	Lys	Arg	His	Asn	Ala	Met	Ala	Gln	Asp	Gly
Asp	Pro	Phe	Ala	Lys	Leu	His	Val	Gln	Thr	Asp	Thr	Phe	Gly	Ser	Arg
Val	Arg	Val	Arg	Gly	Ala	Gln	Thr	Gly	Leu	Tyr	His	Lys	Met	Asn	Lys
Lys	Gly	Lys	Leu	His	Ala	Lys	Ser	Asn	Gly	Lys	Gly	Lys	Asp	Lys	Val
His	Gln	Gln	His	Val	Leu	Gln	Asn	Asn	Tyr	Thr	Ala	Leu	Gln	Asn	Ala
Lys	Tyr	Gln	Gly	Arg	Tyr	Met	Ala	Phe	Thr	Arg	Lys	Gly	Arg	Pro	Arg
Lys	Gly	Leu	Lys	Arg	Arg	Gln	His	Gln	Arg	Gln	Val	His	His	Met	Tyr
Arg	Pro	Arg	Gly	His	Gln	His	Thr	Gln	Gln	Gln	Leu	Leu	His	Ala	



179	Val	Pro	Asn	Gly	Asn	Met	Val	Lys	Asp	Asn	Leu	Leu	Ala	Gly	Ala	
180	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195
181	Gly	Met	Leu	Leu	Tyr	Leu	Asp	Pro	Asn	Leu	Leu	Val	Pro	Ala		
182	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197
183	Val	Lys	Leu	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Pro	Gly	Gly	Gly	Val	Ala
184	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199
185	Pro	Asn	Val	Leu	Asn	Leu	Asn	Gly	Ala	Gly	Asp	Pro	Leu	Thr	Pro	
186	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201
187	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	His	His	Leu	Thr	Asn	Ala
188	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203
189	Gln	Gly	Pro	Leu	Pro	Ile	Pro	Val	His	Pro	His	Gly	Tyr	Asp	Asp	Ala
190	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205
191	Cag	aaa	ctc	tta	gaa	cac	atg	ggt	ggt	caa	caa	taa	cat	gac	agt	agr
192	Gln	Lys	Leu	Leu	Gln	His	Met	Gly	Gly	Pro	Ala	Pro	Pro	Asp	Ser	Ser
193	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208
194	tgg	aag	gga	gga	tta	aaa	gtg	cat	taa	aaa	gaa	gga	cat	ggg	ttt	got
195	Trp	Lys	Gly	Gly	Leu	Lys	Val	Pro	Tyr	Asn	Val	Gly	Pro	Gly	Phe	Ala
196	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211
197	gga	aac	ttt	tca	aca	caa	aag	gtc	aag	atc	cat	att	caa	tcg	tac	act
198	Gly	Asn	Phe	Ser	Thr	Gln	Lys	Val	Lys	Met	His	Ile	His	Ser	Tyr	Thr
199	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
200	aaa	gtg	aca	gga	atc	tat	aat	gtc	att	ggt	aat	ctc	aaa	gga	got	ctg
201	Lys	Val	Thr	Arg	Ile	Tyr	Asn	Val	Ile	Gly	Thr	Leu	Lys	Gly	Ala	Leu
202	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
203	gaa	gaa	gac	aga	tat	gtc	att	ggt	ggt	cat	caa	gac	gat	ggg	gta	
204	Gln	Pro	Asp	Arg	Tyr	Val	Ile	Leu	Gly	Gly	His	Arg	Asp	Ala	Trp	Val
205	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
206	ttt	ggg	ggc	att	aac	cat	caa	aat	gga	caa	att	ttt	gtt	cat	aaa	att
207	Phe	Gly	Gly	Ile	Asp	Pro	Gln	Ser	Gly	Ala	Ala	Val	Val	His	Gln	Ile
208	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
209	gtg	egg	agg	ttt	gga	acc	ctg	aag	aag	aaa	gga	agg	agg	cat	aga	agg
210	Val	Arg	Ser	Phe	Gly	Thr	Leu	Lys	Lys	Lys	Gly	Arg	Arg	Pro	Arg	Arg
211	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
212	aca	aat	ttg	ttt	gga	agg	tgg	gat	gaa	aaa	gaa	ttt	agg	cat	ttt	ggt
213	Thr	Ile	Leu	Phe	Ala	Ser	Trp	Asp	Ala	Gln	Gln	Phe	Gly	Leu	Leu	Gly
214	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
215	tcg	act	cag	tgg	gaa	gag	gaa	cat	tta	aga	ttc	tta	caa	gag	aga	ggt
216	Ser	Thr	Gln	Trp	Ala	Gln	Gln	His	Ser	Arg	Leu	Leu	His	Gln	Arg	Gly
217	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
218	tgg	ggt	tat	att	att	ggt	gat	tcg	tta	ata	ttt	att	att	tat	att	tta
219	Val	Ala	Tyr	Ile	Asn	Ala	Asp	Ser	Ser	Ile	Gln	Gly	Asn	Tyr	Thr	Leu
220	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
221	ata	att	tat	tat	aca	gga	ctc	atc	tat	att	tta	att	tat	att	ctc	aca
222	Arg	Val	Asp	Lys	Thr	Pro	Leu	Met	Tyr	Ser	Leu	Val	Tyr	Asn	Leu	Thr
223	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
224	aaa	tat	ctc	tta	att	ctt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt
225	Lys	Val	Leu	Gln	Ser	Pro	Asp	Gln	Gly	Pro	Gln	Lys	Lys	Leu	Tyr	
226	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
227	tat	att	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt
228	Asp	Ser	Trp	Lys	Gln	Lys	Ser	Pro	Ser	Pro	Pro	Pro	Pro	Pro	Pro	Pro
229	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214
230	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt	ttt





1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492  
 493  
 494  
 495  
 496  
 497  
 498  
 499  
 500  
 501  
 502  
 503  
 504  
 505  
 506  
 507  
 508  
 509  
 510  
 511  
 512  
 513  
 514  
 515  
 516  
 517  
 518  
 519  
 520  
 521  
 522  
 523  
 524  
 525  
 526  
 527  
 528  
 529  
 530  
 531  
 532  
 533  
 534  
 535  
 536  
 537  
 538  
 539  
 540  
 541  
 542  
 543  
 544  
 545  
 546  
 547  
 548  
 549  
 550  
 551  
 552  
 553  
 554  
 555  
 556  
 557  
 558  
 559  
 560  
 561  
 562  
 563  
 564  
 565  
 566  
 567  
 568  
 569  
 570  
 571  
 572  
 573  
 574  
 575  
 576  
 577  
 578  
 579  
 580  
 581  
 582  
 583  
 584  
 585  
 586  
 587  
 588  
 589  
 590  
 591  
 592  
 593  
 594  
 595  
 596  
 597  
 598  
 599  
 600  
 601  
 602  
 603  
 604  
 605  
 606  
 607  
 608  
 609  
 610  
 611  
 612  
 613  
 614  
 615  
 616  
 617  
 618  
 619  
 620  
 621  
 622  
 623  
 624  
 625  
 626  
 627  
 628  
 629  
 630  
 631  
 632  
 633  
 634  
 635  
 636  
 637  
 638  
 639  
 640  
 641  
 642  
 643  
 644  
 645  
 646  
 647  
 648  
 649  
 650  
 651  
 652  
 653  
 654  
 655  
 656  
 657  
 658  
 659  
 660  
 661  
 662  
 663  
 664  
 665  
 666  
 667  
 668  
 669  
 670  
 671  
 672  
 673  
 674  
 675  
 676  
 677  
 678  
 679  
 680  
 681  
 682  
 683  
 684  
 685  
 686  
 687  
 688  
 689  
 690  
 691  
 692  
 693  
 694  
 695  
 696  
 697  
 698  
 699  
 700  
 701  
 702  
 703  
 704  
 705  
 706  
 707  
 708  
 709  
 710  
 711  
 712  
 713  
 714  
 715  
 716  
 717  
 718  
 719  
 720  
 721  
 722  
 723  
 724  
 725  
 726  
 727  
 728  
 729  
 730  
 731  
 732  
 733  
 734  
 735  
 736  
 737  
 738  
 739  
 740  
 741  
 742  
 743  
 744  
 745  
 746  
 747  
 748  
 749  
 750  
 751  
 752  
 753  
 754  
 755  
 756  
 757  
 758  
 759  
 760  
 761  
 762  
 763  
 764  
 765  
 766  
 767  
 768  
 769  
 770  
 771  
 772  
 773  
 774  
 775  
 776  
 777  
 778  
 779  
 780  
 781  
 782  
 783  
 784  
 785  
 786  
 787  
 788  
 789  
 790  
 791  
 792  
 793  
 794  
 795  
 796  
 797  
 798  
 799  
 800  
 801  
 802  
 803  
 804  
 805  
 806  
 807  
 808  
 809  
 810  
 811  
 812  
 813  
 814  
 815  
 816  
 817  
 818  
 819  
 820  
 821  
 822  
 823  
 824  
 825  
 826  
 827  
 828  
 829  
 830  
 831  
 832  
 833  
 834  
 835  
 836  
 837  
 838  
 839  
 840  
 841  
 842  
 843  
 844  
 845  
 846  
 847  
 848  
 849  
 850  
 851  
 852  
 853  
 854  
 855  
 856  
 857  
 858  
 859  
 860  
 861  
 862  
 863  
 864  
 865  
 866  
 867  
 868  
 869  
 870  
 871  
 872  
 873  
 874  
 875  
 876  
 877  
 878  
 879  
 880  
 881  
 882  
 883  
 884  
 885  
 886  
 887  
 888  
 889  
 890  
 891  
 892  
 893  
 894  
 895  
 896  
 897  
 898  
 899  
 900  
 901  
 902  
 903  
 904  
 905  
 906  
 907  
 908  
 909  
 910  
 911  
 912  
 913  
 914  
 915  
 916  
 917  
 918  
 919  
 920  
 921  
 922  
 923  
 924  
 925  
 926  
 927  
 928  
 929  
 930  
 931  
 932  
 933  
 934  
 935  
 936  
 937  
 938  
 939  
 940  
 941  
 942  
 943  
 944  
 945  
 946  
 947  
 948  
 949  
 950  
 951  
 952  
 953  
 954  
 955  
 956  
 957  
 958  
 959  
 960  
 961  
 962  
 963  
 964  
 965  
 966  
 967  
 968  
 969  
 970  
 971  
 972  
 973  
 974  
 975  
 976  
 977  
 978  
 979  
 980  
 981  
 982  
 983  
 984  
 985  
 986  
 987  
 988  
 989  
 990  
 991  
 992  
 993  
 994  
 995  
 996  
 997  
 998  
 999  
 1000

Asp Ser Lys Lys Ser Lys 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

<210> 9  
 <211> 2082  
 <212> TNA  
 <213> Mus musculus

<210>  
 <211> 2082  
 <212> 2111 2082

411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Asp	Lys	Thr	Ala	Leu	Asn	Lys	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Ala	Leu	Leu	Lys	Thr	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Asn	Leu	Ser	Asp	Val	Val	Leu	Pro	Tyr	Asn	Ala	Leu	Asn	Leu	Asn	Leu	Asn	Leu	Asn	Leu
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Thr	Pro	Gly	Gly	Asp	Leu	Val	Tyr	Val	Asn	Lys	Ala	Arg	Thr	Ala	Asp	Thr	Ala	Asp	Thr
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Phe	Phe	Lys	Leu	Gln	Arg	Gln	Met	Lys	Leu	Ser	Lys	Ser	Gly	Lys	Leu	Asn	Leu	Asn	Leu
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
Gly	Asp	Gly	Ala	Thr	Gly	Ala	Gly	Leu	Ala	Arg	Gly	Asn	Met	Val	Lys	Asn	Leu	Asn	Leu
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
Gly	Asp	Gly	Ala	Thr	Gly	Ala	Gly	Leu	Ala	Arg	Gly	Asn	Met	Val	Lys	Asn	Leu	Asn	Leu
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
Ala	Gln	Leu	Ala	Gly	Ala	Lys	Gly	Met	Leu	Leu	Tyr	Ser	Asp	Pro	Ala	Asp	Pro	Ala	Asp
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
Gly	Asp	Gly	Ala	Thr	Gly	Ala	Gly	Leu	Ala	Arg	Gly	Asn	Met	Val	Lys	Asn	Leu	Asn	Leu
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	Asn	Leu	Asn	Leu
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
Asp	Tyr	Phe	Val	Pro	Ala	Val	Lys	Ser	Tyr	Pro	Asp	Gly	Tyr	Asn	Leu	Asn	Leu	Asn	Leu
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
Pro	Gly	Gly	Gly	Val	Gln	Arg	Gly	Asn	Val	Leu	Asn	Leu	Asn	Leu	Asn	Gly	Ala	Asn	Leu
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
Gly	Asp	Pro	Leu	Thr	Pro	Gly	Tyr	Pro	Ala	Asn	Gln	His	Ala	Tyr	Arg	As			

aaa ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt	11
Ala Phe Gly Leu Leu Gly Ser Thr Val Arg Ala Val Val Gly Ser Arg	
471	
aaa tta tta tta tta tta tta tta tta tta tta tta tta tta tta tta	12
Leu Ile Val Ala Arg Gly Val Ala Tyr Leu Asn Asn Arg Ser Ser Leu	
472	
aaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	13
Gly Gly Asn Tyr Thr Leu Arg Val Arg Lys Thr Val Leu Met Tyr Ser	
473	
tta ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt	14
Leu Val Tyr Asn Leu Thr Lys Glu Leu Val Ser Arg Arg Gly Gly Phe	
474	
gaa gaa aaa ttt ttt ttt gaa agc ttt aaa gaa gaa gaa gaa gaa	15
Glu Gly Lys Ser Leu Tyr Asp Ser Trp Lys Glu Lys Ser Pro Ser Pro	
475	
gaa ttt att gaa att gaa gaa gaa att att gaa gaa gaa gaa gaa	16
Glu Phe Ile Gly Met Pro Arg Ile Ser Lys Leu Gly Ser Gly Asn Asp	
476	
ttt gaa gaa ttt ttt ttt gaa gaa gaa gaa gaa gaa gaa gaa gaa	17
Phe Glu Val Phe Phe Glu Arg Leu Gly Ile Ala Ser Gly Arg Ala Arg	
477	
tat act aaa aat ttt gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	18
Tyr Thr Lys Asn Trp Lys Thr Asn Lys Val Ser Ser Tyr Pro Leu Tyr	
478	
caa agt gtc tat gaa gaa tat gag ctg tta gta aaa ttt tat gac gaa	19
His Ser Val Tyr Glu Thr Tyr Glu Leu Val Val Lys Phe Tyr Asp Pro	
479	
aaa ttt aaa taa caa ctg act gtg gaa gaa gaa gaa gaa gaa gaa	20
Thr Phe Lys Tyr His Leu Thr Val Ala Glu Val Arg Gly Ala Met Val	
480	
ttt gaa ttt gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	21
Phe Glu Leu Ala Asn Ser Ile Val Leu His Phe Asp Tyr Glu Ser Tyr	
481	
gtt gta gtt gtt gtt gtt gtt gtt gtt gtt gtt gtt gtt gtt gtt	22
Ala Val Ala Leu Lys Tyr Ala Asp Thr Ile Tyr Asn Ile Ser Met	
482	
aaa cat caa caa gaa atg aag gct tac ata ata tta ttt gat taa ctg	23
Lys His Pro Glu Glu Met Lys Ala Tyr Met Ile Ser Phe Asp Ser Leu	
483	
ttt ttt gaa gtt att aat ttt gaa gat gtt gaa gaa gaa gaa gaa	24
Phe Ser Ala Val Asn Asn Phe Thr Asp Val Ala Ser Lys Phe Asn Glu	
484	
aga ctg gaa gaa tta gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	25
Arg Leu Glu Glu Glu Leu Asp Lys Ser Asn Pro Ile Leu Leu Arg Ile Met	
485	
aat gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	26
Asn Asp Glu Leu Met Tyr Leu Glu Arg Ala Phe Ile Asp Pro Leu Gly	
486	
tta gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	27
Leu Pro Gly Arg Ile Ile Tyr Arg His Thr Ile Tyr Ala Pro Ser Ser	
487	
gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	28
His Asn Lys Tyr Ala Gly Glu Ser Phe Ile Arg Ile Tyr Asp Ala Leu	
488	
ttt gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa	29
His Asp Ile Ser Ser Lys Val Asn Ala Glu Tyr Ala Arg Asn Ile Val	
489	



431  
 Arg Ser Arg Arg Arg Arg Ile Ile Ile Ala Ser Arg Arg Arg Arg  
 432  
 Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg  
 433  
 Leu Ile Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg  
 434  
 Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg  
 435  
 Leu Val Tyr Arg Leu Thr Lys Ala Leu Val Ser Arg Arg Arg Arg  
 436  
 Glu Arg Lys Ser Leu Tyr Asp Ser Trp Lys Glu Lys Ser Arg Arg Arg  
 437  
 Glu Ile Ile Gly Met Pro Arg Ile Ser Lys Leu Gly Ser Gly Arg Arg  
 438  
 Phe Arg Val Ile Phe Gln Arg Leu Gly Ile Ala Ser Gly Arg Ala Arg  
 439  
 Tyr Thr Lys Arg Trp Lys Thr Arg Lys Val Ser Ser Tyr Pro Leu Tyr  
 440  
 His Ser Val Tyr Glu Thr Tyr Gln Leu Val Val Lys Phe Tyr Arg Arg  
 441  
 Thr Phe Lys Tyr His Leu Thr Val Ala Gln Val Arg Gly Ala Met Val  
 442  
 Phe Gln Leu Ala Arg Ser Ile Val Leu Pro Phe Asp Cys Gln Ser Tyr  
 443  
 Ala Val Ala Leu Lys Lys Tyr Ala Asp Thr Ile Tyr Arg Ile Ser Met  
 444  
 Lys His Pro Gln Glu Met Lys Ala Tyr Met Ile Ser Phe Asp Ser Leu  
 445  
 Phe Ser Ala Val Arg Arg Phe Thr Asp Val Ala Ser Lys Phe Arg Gln  
 446  
 Arg Leu Gln Gln Leu Asp Lys Ser Arg Pro Ile Leu Leu Arg Ile Met  
 447  
 Arg Asp Gln Leu Met Tyr Leu Gln Arg Ala Phe Ile Asp Pro Leu Gly  
 448  
 Leu Ser Gly Arg Pro Phe Tyr Arg His Thr Ile Tyr Ala Pro Ser Ser  
 449  
 His Arg Lys Tyr Ala Gly Gln Ser Phe Pro Gly Ile Tyr Asp Ala Leu  
 450  
 Phe Arg Ile Ser Ser Lys Val Arg Ala Ser Lys Ala Trp Arg Gln Val  
 451  
 Lys Arg Gln Ile Ser Ile Ala Thr Phe Thr Val Gln Ala Ala Ala Glu  
 452  
 Thr Leu Arg Gln Val Ala  
 453

454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492  
 493  
 494  
 495  
 496  
 497  
 498  
 499  
 500  
 501  
 502  
 503  
 504  
 505  
 506  
 507  
 508  
 509  
 510  
 511  
 512  
 513  
 514  
 515  
 516  
 517  
 518  
 519  
 520  
 521  
 522  
 523  
 524  
 525  
 526  
 527  
 528  
 529  
 530  
 531  
 532  
 533  
 534  
 535  
 536  
 537  
 538  
 539  
 540  
 541  
 542  
 543  
 544  
 545  
 546  
 547  
 548  
 549  
 550  
 551  
 552  
 553  
 554  
 555  
 556  
 557  
 558  
 559  
 560  
 561  
 562  
 563  
 564  
 565  
 566  
 567  
 568  
 569  
 570  
 571  
 572  
 573  
 574  
 575  
 576  
 577  
 578  
 579  
 580  
 581  
 582  
 583  
 584  
 585  
 586  
 587  
 588  
 589  
 590  
 591  
 592  
 593  
 594  
 595  
 596  
 597  
 598  
 599  
 600  
 601  
 602  
 603  
 604  
 605  
 606  
 607  
 608  
 609  
 610  
 611  
 612  
 613  
 614  
 615  
 616  
 617  
 618  
 619  
 620  
 621  
 622  
 623  
 624  
 625  
 626  
 627  
 628  
 629  
 630  
 631  
 632  
 633  
 634  
 635  
 636  
 637  
 638  
 639  
 640  
 641  
 642  
 643  
 644  
 645  
 646  
 647  
 648  
 649  
 650  
 651  
 652  
 653  
 654  
 655  
 656  
 657  
 658  
 659  
 660  
 661  
 662  
 663  
 664  
 665  
 666  
 667  
 668  
 669  
 670  
 671  
 672  
 673  
 674  
 675  
 676  
 677  
 678  
 679  
 680  
 681  
 682  
 683  
 684  
 685  
 686  
 687  
 688  
 689  
 690  
 691  
 692  
 693  
 694  
 695  
 696  
 697  
 698  
 699  
 700  
 701  
 702  
 703  
 704  
 705  
 706  
 707  
 708  
 709  
 710  
 711  
 712  
 713  
 714  
 715  
 716  
 717  
 718  
 719  
 720  
 721  
 722  
 723  
 724  
 725  
 726  
 727  
 728  
 729  
 730  
 731  
 732  
 733  
 734  
 735  
 736  
 737  
 738  
 739  
 740  
 741  
 742  
 743  
 744  
 745  
 746  
 747  
 748  
 749  
 750  
 751  
 752  
 753  
 754  
 755  
 756  
 757  
 758  
 759  
 760  
 761  
 762  
 763  
 764  
 765  
 766  
 767  
 768  
 769  
 770  
 771  
 772  
 773  
 774  
 775  
 776  
 777  
 778  
 779  
 780  
 781  
 782  
 783  
 784  
 785  
 786  
 787  
 788  
 789  
 790  
 791  
 792  
 793  
 794  
 795  
 796  
 797  
 798  
 799  
 800  
 801  
 802  
 803  
 804  
 805  
 806  
 807  
 808  
 809  
 810  
 811  
 812  
 813  
 814  
 815  
 816  
 817  
 818  
 819  
 820  
 821  
 822  
 823  
 824  
 825  
 826  
 827  
 828  
 829  
 830  
 831  
 832  
 833  
 834  
 835  
 836  
 837  
 838  
 839  
 840  
 841  
 842  
 843  
 844  
 845  
 846  
 847  
 848  
 849  
 850  
 851  
 852  
 853  
 854  
 855  
 856  
 857  
 858  
 859  
 860  
 861  
 862  
 863  
 864  
 865  
 866  
 867  
 868  
 869  
 870  
 871  
 872  
 873  
 874  
 875  
 876  
 877  
 878  
 879  
 880  
 881  
 882  
 883  
 884  
 885  
 886  
 887  
 888  
 889  
 890  
 891  
 892  
 893  
 894  
 895  
 896  
 897  
 898  
 899  
 900  
 901  
 902  
 903  
 904  
 905  
 906  
 907  
 908  
 909  
 910  
 911  
 912  
 913  
 914  
 915  
 916  
 917  
 918  
 919  
 920  
 921  
 922  
 923  
 924  
 925  
 926  
 927  
 928  
 929  
 930  
 931  
 932  
 933  
 934  
 935  
 936  
 937  
 938  
 939  
 940  
 941  
 942  
 943  
 944  
 945  
 946  
 947  
 948  
 949  
 950  
 951  
 952  
 953  
 954  
 955  
 956  
 957  
 958  
 959  
 960  
 961  
 962  
 963  
 964  
 965  
 966  
 967  
 968  
 969  
 970  
 971  
 972  
 973  
 974  
 975  
 976  
 977  
 978  
 979  
 980  
 981  
 982  
 983  
 984  
 985  
 986  
 987  
 988  
 989  
 990  
 991  
 992  
 993  
 994  
 995  
 996  
 997  
 998  
 999  
 1000





<400> 15  
 Ser Ala Arg Val Ser Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly  
 1 5 10  
 Ile Thr Glu Leu Asn Val Arg Lys Lys

<210> 16  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> Description of Artificial Sequence: Fusion of  
 tetanus toxoid epitope and PSM

<400> 16  
 Ala Val Val Leu Arg Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly  
 1 5 10 15  
 Ile Thr Glu Leu Glu Met Lys Thr Tyr  
 20 25

<210> 17  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> Description of Artificial Sequence: Fusion of  
 tetanus toxoid epitope and PSM

<400> 17  
 Met Phe Leu Glu Arg Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly  
 1 5 10 15  
 Ile Thr Glu Leu His Val Ile Tyr Ala  
 20 25

<210> 18  
 <211> 31  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <221> Description of Artificial Sequence: Fusion of  
 tetanus toxoid epitope and PSM

<400> 18  
 Asn Ser Arg Leu Ile Ile Ala Asn Ile Thr Val Ser Ile Thr Lys Arg  
 1 5 10 15  
 Val Ile Lys Val Ser Ala Ser His Leu Glu Val Arg Tyr Thr Thr  
 20 25 30

<210> 21  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Fusion of  
retardase to x-lysozyme and PSM

<410> 17  
Val Val Leu Asn Lys Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg  
1 5 10 15  
Val Pro Lys Val Ser Ala Ser His Leu Glu Thr Phe Asp Ser Leu  
20 25 30

<210> 21  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Fusion of  
retardase to x-lysozyme and PSM

<400> 20  
Leu Met Phe Leu Glu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg  
1 5 10 15  
Val Pro Lys Val Ser Ala Ser His Leu Glu Thr Phe Asp Ser His Asn  
20 25 30

<210> 21  
<211> 15  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Artificial His  
tag

<220>  
<221> CDS  
<222> (1)...(18)

<400> 21  
His His His His His His  
1 6

<210>  
<211>

<21> 21  
<21> Artificial Sequence

<22> Description of Artificial Sequence: Artificial His  
tag

<21> 21  
His His His His His His  
1 2 3 4 5 6

<21> 21  
<211> 4  
<212> DNA  
<213> Artificial Sequence

<22>  
<221> Description of Artificial Sequence: Artificial His  
tag

<21>  
<211> 178  
<212> (1)... (178)

<21> 178  
ATG GAG CAG CAG CAG CAG CAT CAG CAT CAG CAT CAG CAT CAG  
Met Lys His Gln His Gln His Gln His Gln His Gln His Gln  
1 5 10 42

<21> 21  
<211> 14  
<212> PPT  
<213> Artificial Sequence

<22>  
<221> Description of Artificial Sequence: Artificial His  
tag

<21> 21  
Met Lys His Gln His Gln His Gln His Gln His Gln His  
1 5 10

<21> 21  
<211> 16  
<212> DNA  
<213> Miscellaneous

<21>  
<211> 117  
<212> (1)... (117)

<21> 117

Met Asp Ala Met Lys Arg Gly Leu Tyr Tyr Val Leu Leu Leu Tyr  
 1 5 10

Ala Val Ile Val Ser Ile Ser

<211> 24  
 <211> 33  
 <212> PPT  
 <213> Mus musculus

Met Asp Ala Met Lys Arg Gly Leu Tyr Tyr Val Leu Leu Leu Lys Tyr  
 1 5 10 15  
 Ala Val Phe Val Ser Pro Ser  
 20

<210> 27  
 <211> 33  
 <212> DNA  
 <213> Homo sapiens

<221>  
 <221> CDS  
 <222> '11...133'

Met Asp Ala Met Lys Arg Gly Leu Tyr Tyr Val Leu Leu Leu Lys Tyr  
 1 5 10 15 20 25 30 33

<210> 28  
 <211> 11  
 <212> PPT  
 <213> Homo sapiens

Met Asp Ala Met Lys Arg Gly Leu Tyr Tyr Val Leu Leu Leu Lys Tyr  
 1 5 10 15

<211> 14  
 <211> 31  
 <212> DNA  
 <213> Homo sapiens

<221>  
 <221> CDS  
 <222> '11...133'

Met Asp Ala Met Lys Arg Gly Leu Tyr Tyr Val Leu Leu Leu Lys Tyr  
 1 5 10 15 20 25 30 33



Pro Asp Thr Arg

\*2110 34  
\*2111 344  
\*2112 PRT  
\*2113 Artificial Sequence

\*2200  
\*2201 Fig. 1B - Various FGF- isoforms

\*4300 34  
Met Gly Ser Pro Arg Ser Ala Leu Ser Cys Leu Leu Leu His Leu Leu  
1 1 10 1,  
Val Leu Cys Leu Gln Ala Gln Glu Gly Pro Gly Arg Gly Pro Ala Leu  
20 25 30  
Gly Arg Glu Leu Ala Ser Leu Phe Arg Ala Gly Arg Glu Pro Gln Gly  
35 40 45  
Val Ser Gln Gln Val Thr Val Gln Ser Ser Pro Asn Phe Thr Gln His  
50 55 60  
Val Arg Glu Gln Ser Leu Val Thr Asp Gln Leu Ser Arg Arg Leu Ile  
65 70 75 80  
Arg Thr Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys His Val Gln Val  
85 90 95  
Leu Ala Asn Lys Arg Ile Asn Ala Met Ala Glu Asp Gly Asp Pro Phe  
100 105 110  
Ala Lys Leu Ile Val Glu Thr Asp Thr Phe Gly Ser Arg Val Arg Val  
115 120 125  
Arg Gly Ala Glu Thr Gly Leu Tyr Ile Cys Met Asn Lys Lys Gly Lys  
130 135 140  
Leu Ile Ala Lys Ser Asn Gly Lys Gly Lys Asp Cys Val Phe Thr Glu  
145 150 155 160  
Ile Val Leu Glu Asn Asn Tyr Thr Ala Leu Gln Asn Ala Lys Tyr Glu  
165 170 175  
Gly Trp Tyr Met Ala Phe Thr Arg Lys Gly Arg Pro Arg Lys Gly Ser  
180 185 190  
Lys Thr Arg Gln His Gln Arg Glu Val His Phe Met Lys Arg Leu Pro  
195 200 205  
Arg Gly His His Thr Thr Glu Gln Ser Leu Arg Phe Glu Phe Leu Asn  
210 215 220  
Tyr Pro Pro Phe Thr Arg Ser Leu Arg Gly Ser Gln Arg Thr Tyr Ala  
225 230 235 240  
Pro Glu Pro Arg

\*2100 35  
\*2110 215  
\*2111 PRT  
\*2112 Homo sapiens

\*2200  
\*2201 Dist. feature  
\*2202 1.1.1.1  
\*2203 Fig. 1 - Wild Type WT FGF-1



12 14 14  
 Thr Ala Ser Glu Ser Arg Ser Val His His Met Lys Ala Ser His Arg  
 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14  
 Gly His Val Thr Thr Ser Ser Ser Ser Arg His His His Thr Arg Lys  
 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14  
 Pro Arg Ser Thr Arg Ser Ser Arg Arg Ser Ser Arg Ser Arg Arg Arg  
 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14 14  
 Ala His Arg  
 14 14 14

<210> 1  
 <211> 1  
 <212> 141  
 <213> Artificial Sequence

<220>  
 <223> Fig. 6 - FZ1: Internal variant of FGF2b constructed by replacing  
 external  
 loops in the FGF2 structure with F2 epitope

<400> 37  
 Met Ala Ser Val Thr Val Gln Ser Ser Pro Asn Phe Thr Gln His Val  
 1 5 10 15  
 Arg Glu Gln Ser Leu Val Thr Asp Gln Leu Ser Arg Arg Leu Ile Arg  
 20 25 30  
 Thr Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys His Val Gln Val Leu  
 35 40 45  
 Ala Asn Lys Arg Ile Asn Ala Met Ala Gln Asp Gly Asp Pro Phe Ala  
 50 55 60  
 Lys Leu Ile Val Glu Thr Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe  
 65 70 75 80  
 Ile Gly Ile Thr Gln Leu Gly Ser Arg Val Arg Val Arg Gly Ala Gln  
 85 90 95  
 Thr Gly Leu Tyr Ile Cys Met Asn Lys Lys Gly Lys Leu Ile Ala Lys  
 100 105 110  
 Ser Asn Gly Lys Gly Lys Asp Cys Val Phe Thr Glu Ile Gly Leu Gln  
 115 120 125  
 Asn Asn Tyr Thr Ala Leu Gln Asn Ala Lys Tyr Gln Gly Trp Tyr Met  
 130 135 140  
 Ala Phe Thr Arg Lys Gly Arg Pro Arg Lys Gly Ser Lys Thr Arg Gln  
 145 150 155 160  
 His Gln Arg Gln Val His Phe Met Lys Arg Leu Pro Arg Gly His His  
 165 170 175  
 Thr Thr Gln Ser Ser Arg Phe His Phe Leu Asn Tyr Pro Thr Phe  
 180 185 190  
 Thr Arg Ser Leu Arg Gly Ser Gln Arg Thr Trp Ala Pro Gln Pro Arg  
 195 200 205

<210> 1  
 <211> 1  
 <212> 141  
 <213> Artificial Sequence

<220>  
 <223> Fig. 6 - FZ1: Internal variant of FGF2b constructed by replacing



© 2006 The Authors  
Journal compilation © 2006 Blackwell Publishing Ltd

[illegible]

<210>	39
<211>	199
<212>	PRT
<213>	Artificial Sequence

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

2400 35

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Gln | Val | Thr | Val | Gln | Ser | Ser | Pro | Asn | Thr | Thr | Gln | His | Val |  |
| 1   |     |     |     |     |     | 8   |     |     | 12  |     |     |     |     | 15  |     |  |
| Arg | Val | Ala | Ser | Leu | Val | Thr | Asp | Gln | Leu | Ser | Arg | Arg | Leu | Ile | Arg |  |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |
| Thr | Tyr | Gln | Leu | Tyr | Ser | Asn | Thr | Ser | Gly | Iys | His | Val | Gln | Val | Leu |  |
|     |     | 3   |     |     |     |     | 37  |     |     |     |     | 45  |     |     |     |  |
| Ala | Asp | Iys | As  | Ile | Asn | Ala | Met | Ala | His | Arg | Gly | Asp | Pro | Thr | Ala |  |
|     | 1   |     |     |     |     | 13  |     |     |     | 17  |     |     |     |     |     |  |
| Iys | Leu | Ile | Val | Ala | Thr | Asp | Thr | Ile | Gly | Arg | Arg | Val | As  | Val | As  |  |
| 24  |     |     |     |     | 29  |     |     |     |     |     |     |     |     |     | 32  |  |
| Gly | Ala | His | Thr | Gly | Leu | Iys | Ile | Gly | Met | Asn | Iys | Iys | Gly | Iys | Ile |  |
|     |     |     |     | 4   |     |     |     |     | 9   |     |     |     |     | 14  |     |  |
| Ile | Ala | Iys | Arg | Asn | Gly | Iys | Gly | Iys | Asn | Gly | Val | Ile | Thr | Ala | Ile |  |
|     |     |     |     | 19  |     |     |     |     | 23  |     |     |     |     |     |     |  |

